CAB INTERNATIONAL
MYCOLOGICAL INSTITUTE
LIBRARY

IMI Books / ELL ✓

HERB.

COMMONWEALTH MYCOLOGICAL INSTITUTE
28 JAN 1960

HERB.

COMMONWEALTH MYCOLOGICAL INSTITUTE

VOL. IV. JANUARY, 1896. NO. I.

ERYTHEA

A JOURNAL OF BOTANY, WEST AMERICAN AND GENERAL.

EDITED BY

Willis Linn Jepson

ASSISTED BY

Alice Eastwood and J. Burtt Davy.

CONTENTS:

PAGE

New Kansas Fungi, - *J. B. Ellis and Elam Bartholomew* 1

Presidential Address to the Botanical Section of the British Association, - *W. T. Thiselton-Dyer, F. R. S.* 5

Reviews and Criticisms, - - - - 16

Miscellaneous Notes and News, - - - - 20

Berkeley, California.

Cubery & Company, Printers
587 Mission Street, San Francisco, California
1896.

NEW KANSAS FUNGI.

By J. B. Ellis and Elam Bartholomew.

The following thirty-two species of new fungi, with the exception of the first one on the list, were found by the junior author in Rooks County, Kansas, and the fact that he has found 130 additional new species in the same locality, leads to the conclusion that this region, which is situated midway between the Missouri River on the east and the Rocky Mountains on the west, at an altitude of 2000 feet above the sea, is unusually rich in many species, apparently rare, or not indigenous to other parts of the country.

Polyporus Kansensis. On the base of a rotten stump, Louisville, Pottawatomie Co., Kan., Oct., 1893 (No 1177).

Pileus orbicular, convexo-convex including the hymenium, 10 cm. across, light brown, minutely appressed-squamulose, margin thin and acute. Stipe 10-12 cm. high, 2 cm. thick, colored like the pileus or a little lighter; glabrous or nearly so, ½ its length brownish,—black below, subequal or subattenuated above. Flesh of the pileus and stipe milk white, firm, suberose-carnose. Pores of medium size, (⅓ mm. diam., 2–2½ mm. long) round or subangular, margin even, granulose-tomentose, decurrent. Spores white, elliptical, 6–8x5μ, on stout, cylindrical basidia 6–8μ thick. This is one of our finest North American species.

Puccinia Kansensis. On leaves of *Buchloe dactyloides*, Sept. 18, 1894 (No. 1577).

II and III. Sori amphigenous or mostly epiphyllous, sparsely scattered, very small, sublinear to linear by confluence. Uredosori soon appearing through the ruptured epidermis which falls away leaving the spore-mass mostly superficial. Uredospores subglobose or ovate, 16–20x14-16μ, epispore smooth but irregular, thick (about 2–3μ) hyaline; nucleus consisting of coarse, bright golden-yellow, granular matter. Teleutosori almost wholly superficial. Teleutospores bright yellowish-brown, short-elliptical, rounded,

slightly constricted, nearly equal, lower cell sometimes wedge-shaped, not thickened at the apex, 25–30x15–18μ. Pedicels hyaline, short, weak and shriveled, inclining to fall away. Differs from *Puccinia Buchloes*, Schof., on the same host, in its smaller teleutospores, not thickened at the apex and in its weak, shriveled, hyaline pedicels.

Puccinia jubata. On culms and sheaths of *Hordeum jubatum*, Mch. 7, 1895 (No. 1680).

III. Sori oblong or linear, soon erumpent and naked 1-10 mm. long, ½–¾ mm. wide, often confluent, black Teleutospores clavate-oblong, only slightly constricted, 27–65x13–20μ, upper cell darker, obtusely rounded at the apex, or even truncate but mostly with an obtusely pointed papilla, direct or oblique, lower cell paler and mostly gradually narrowed into the stout, persistent, colored pedicel 40–70μ long. A few uredospores were seen, 18–22x14–16μ, faintly aculeate, yellowish-brown.

Differs from *P. graminis* in its thinner epispore and from *P. omnivora*, E. & E., in its larger spores.

Puccinia sparganioidis. On *Carex sparganioides*, Rooks Co., Kansas, Aug., 1895 (Bartholomew, No. 1908).

II and III. Amphigenous. Uredosori, very narrow, orange-yellow, about 1 mm. long, at first covered by the epidermis, then naked. Uredospores obovate or pyriform, orange-yellow, aculeate, stipitate, 22–35x14–20μ. Teleutosori small, elliptical, oblong or linear, 1–1½ (exceptionally 2–2½) mm. long, soon naked, nearly black. Teleutospores oblong-elliptical or oblong-clavate, very slightly constricted, 35–55 x15–20μ, rounded, or oftener obtusely pointed above, mostly narrowed below into the stout, persistent, 40–50μ long, subequal, hyaline pedicel. Epispore smooth, distinctly thickened above.

Differs from *P. ludibunda*, E. & E. (on the same host) in its [illegible] sori and broader teleutospores. The uredospores also, in *P. ludibunda* are decidedly smaller (16–22x12–15μ), and not as distinctly aculeate.

Puccinia Triodiae. On *Triodia purpurea*, Rooks Co., Kansas, Aug., 1895 (Bartholomew, No. 1897).

II and III. Amphigenous. Sori elliptical or oblong, $\frac{1}{2}$-2 mm. long, soon naked, subpulvinate, nearly black. Uredospores mixed with the teleutospores, subglobose, 18 22μ, hyaline with a thick, subechinulate epispore at first, then yellow-brown and nearly smooth. Teleutospores elliptical or slightly obovate, scarcely constricted, yellow-brown, 22-30x19-22μ; epispore smooth, distinctly thickened at the rounded apex. Pedicels stout, persistent, sometimes oblique, yellowish, 80–90μ long.

Closely allied to *P. Windsoriae*, Schw., but that has teleutospores distinctly obovate and pedicels much shorter.

Cenangella thujina. On exposed wood of White Cedar post (*Thuja occidentalis?*) Feb., 1894 (No. 1382).

Gregarious or thickly scattered, patelliform, black, subcoriaceous, $\frac{1}{2}$-$\frac{3}{4}$ mm. diam., the opposite sides rolled together when dry so as to resemble a *Hysterium*. Asci oblong-pyriform, sessile, 40–20μ, paraphyses united above in a thin blue-black epithecium. Sporidia crowded, obovate, hyaline, uniseptate, strongly constricted at the septum, 14–16x7-8μ, the cells elliptical.

Stictis fusca. On dead branches of *Symphoricarpos occidentalis*, Feb., 1894 (No. 1366).

Immersed, urceolate, orbicular, $\frac{1}{2}$–$\frac{3}{4}$ mm. diam., excipulum and hymenium olive-black (horn-color within). The white-pruinose, erumpent margin constricted and nearly closed at first, but soon with a small round opening exposing the nearly black inner surface of the excipulum. Asci cylindrical, 180–200x5–6μ, 8-spored. Paraphyses filiform, 1-1$\frac{1}{4}\mu$ thick, more or less branched above, but scarcely thickened. Sporidia filiform, nucleate, nearly as long as the asci, 1$\frac{1}{2}\mu$ thick.

Stictis Stigma C. & E. has the dark hymenium but lacks the prominent white margin. *S. radiata* and *S. stellata* which have the same habit differ in their stellate margin. This comes near *S. atro-alba*, Phil. & Plow., which, however,

has asci only 90μ long. Very common. Found also on *Symphoricarpos vulgaris.*

Phoma viridis. On dead branches of *Fraxinus viridis*, Jan. 2, 1895 (No. 1636)

Perithecia evenly but thickly scattered or subaggregated, subepidermal but finally more or less exposed by the falling away of the epidermis, depressed-hemispherical, $\frac{1}{3}$–$\frac{1}{2}$ mm. diam., papillate. Sporules short-elliptical, smoky-hyaline, obtuse, 4–5$\frac{1}{2}$x3$\frac{1}{2}$–4μ.

Approaches *Dothiorella.*

Phoma Ribis. On decorticated twigs of cultivated gooseberry, Mch. 1, 1895 (No. 1668).

Perithecia erumpent-superficial, scattered, globose or subconic-globose, black, 110–135μ diam., with a papilliform ostiolum. Sporules minute, oblong-elliptical, 3–4x1$\frac{1}{4}$–1$\frac{1}{2}\mu$ on short (8-10x2-2$\frac{1}{2}\mu$) basidia often branched at the base. Evidently the spermogonia of some *Diaporthe.*

Differs from *Phoma Ribesia*, Sacc. and *Phoma Grossulariae*, Schulz., in its smaller perithecia and sporules.

Aposphaeria Amaranti. On dead stems of *Amarantus retroflexus* (No. 1730).

Perithecia gregarious, superficial, globose or subovate-globose, soon depressed above or partially collapsing, about $\frac{1}{2}$ mm. diam., covered at first with a thin, brown, granulose-tomentose coat which soon disappears, leaving the perithecium black. Ostiolum papilliform, soon perforated. Sporules ovate-elliptical or subglobose, yellowish-hyaline, with a single large nucleus nearly filling the cavity, 12–15x10μ.

(To be Concluded)

VOL. IV. FEBRUARY, 1896. NO. 2.✓

ERYTHEA

A JOURNAL OF BOTANY, WEST AMERICAN AND GENERAL.

EDITED BY

WILLIS LINN JEPSON

ASSISTED BY

ALICE EASTWOOD AND J. BURTT DAVY.

CONTENTS:

PAGE
On Some Californian Mimuli, - *Edward L. Greene* 21
New Kansas Fungi, - *J. B. Ellis and Elam Bartholomew* 23
Biographical Sketch of M. S. Bebb, - - *S. B. Parish* 29
New Localities for West American Plants, *Alice Eastwood* 32
Reviews and Criticisms, - - - - 32
Short Articles.—Pelargonium anceps, - - - 34
New Localities for Two Introduced Plants, - 34
Sphæroplea annulina, - - - 35
Open Letters, . - - - - - - - 35
Miscellaneous Notes and News, - - - - - 37

BERKELEY, CALIFORNIA.

CUBERY & COMPANY, PRINTERS
587 Mission Street, San Francisco, California
1896.

NEW KANSAS FUNGI.

By J. B. Ellis and Elam Bartholomew.

(Concluded from Vol. IV, p. 4).

Dothiorella concaviuscula. On dead branches of *Fraxinus viridis*, Jan., 1895 (No. 1635).

Stromata orbicular, ½ mm. diam., or by confluence 1 mm. or more long, at first covered, but soon splitting and raising the cuticle and exposing the flat or slightly concave summit, black outside, gray or horn-color within. In the smaller orbicular form there is only a single sporigerous nucleus, but on the elongated forms there are 2–4, a little lighter than the surrounding substance of the stroma, but otherwise scarcely distinguishable from it. Sporules oblong or oblong-elliptical, hyaline, continuous, 4–6x2½–3μ.

Dothiorella Negundinis. On bark of dead limbs of *Negundo aceroides*, Aug., 1894 (No. 1558).

Perithecia minute (100–110μ diam.) perforated above, erumpent in crowded, flattened groups, 1–1½ mm. across, scarcely projecting above the surface of the bark. Sporules elliptical, smoky, hyaline, 5–6x4–5μ.

Cytispora juglandicola. On bark of dead limbs of *Juglans nigra*, Nov. 30, 1894 (No. 1606).

Stromata scattered, orbicular, small, (1 mm. diam.), multilocular, protuberant above and piercing the epidermis with a small, snow-white disk, which is pierced in the center with a single pore and finally disappears. Sporules allantoid, hyaline, only slightly curved. 3½–4x1μ, borne on fasciculate basidia 10–11μ long, attenuated above.

C. juglandina, Sacc., has sporules about twice as long and no white disk. Very abundant on young trees killed by fire last spring.

Sphaeropsis Amorphae. On dead branches of *Amorpha fruticosa*, Dec., 1894 (No. 1630).

Perithecia thickly scattered, subcuticular, ovate-globose, about ½ mm. diameter, raising and splitting or piercing the

epidermis, but not erumpent. Sporules oblong-elliptical, brown, 20-22x7-8μ.

Haplosporella velata. On dead stems of *Celastrus scandens*, Jan., 1895 (No. 1648).

Stromata orbicular, or elliptical, obtusely conical, slaty black inside, raising the epidermis into distinct pustules which are cleft across the summit, the open cleft being filled with gray, fine granular matter. Perithecia reduced to mere light-colored cells in the substance of the stroma. Sporules oblong, obtuse, continuous, brown, 12-16x5-6μ. The bark around the stroma is not at all blackened, but rather whitened or bleached.

Diplodia lophiostomoides. On decorticated limbs of *Negundo aceroides*, July, 1895 (Bartholomew, No. 1780).

Perithecia gregarious, at first covered by the loosened fibers of the wood, then erumpent, globose or elliptical, $\frac{1}{4}$ mm. diam., or $\frac{1}{3}$x$\frac{1}{4}$ mm., ostiolum often slightly compressed. Sporules oblong, elliptical, 15-20x6-7μ, uniseptate, scarcely constricted.

Diplodia (?) subterranea. On a pine post below the surface of the ground, Jan. 10, 1895 (No. 1652).

Perithecia erumpent, superficial, $\frac{1}{3}$-$\frac{3}{4}$ mm. diam., subastomous, with very thin membranous walls which soon fall away, leaving a mass of brown, elliptical uniseptate constricted spores, 6-8x3$\frac{1}{2}$-4μ. No basidia seen.

The thin-walled perithecia and the pulverulent mass of spores make this an abnormal species if, in fact, it should be called a Diplodia.

Diplodia clavispora. On decaying wood of an old elm stump, May, 1894 (No. 1475).

Perithecia erumpent, superficial, closely gregarious, conical, rough, black, about 200x100μ diam. Sporules wedge-shaped, brown, uniseptate, and slightly constricted, 6-8x3-3$\frac{1}{2}$$\mu$. Some of the perithecia contain minute *Phoma* spores.

Diplodiella striispora. On decorticated cottonwood stump, Jan., 1894 (No. 1356).

Perithecia superficial, ovate, opaque, 300-400μ diam., with a prominent papilliform ostiolum, soon perforated. Sporules elliptical, deep brown, uniseptate, scarcely constricted, striate, 18–23x12–14μ.

Diplodina Psoraleæ. On dead stems of *Psoralea tenuiflora*, Dec., 1893 (No. 1323).

Perithecia erumpent, scattered or 2 3 together, subseriate or subconnate, hemispherical, soon flattened-subdiscoid or even collapsing, 250-350μ diam., orbicular or elliptical, perforated at the apex. Sporules oblong-fusoid, uniseptate, not constricted, olivaceous, 8–10x2½–3μ.

Septoria alba. On living leaves of *Silphium integrifolium*, Aug., 1894 (No. 1559).

Spots scattered, small, (1–1½ mm.), white, thin, with a slightly raised margin. Perithecia few (1–4) on a spot, innate, 100–110μ diam. Sporules straight, or somewhat abruptly or irregularly bent, hyaline, faintly nucleate, 20-40 (mostly about 25) x 1¼–1½μ. Differs from *S. Silphii*, E. & E., on the same host in its smaller white spots, fewer perithecia and shorter sporules. Heretofore not separated from that species.

Septoria rhabdocarpa. On fallen leaves of *Populus monilifera*, Sept., 1894 (No. 1567).

Perithecia amphigenous, scattered, not on any spots, subcuticular, depressed-spherical, black, ¼–⅓ mm. diam., only slightly prominent, ostiolum indistinct. Sporules bacillary, straight, continuous, hyaline, subobtuse, 15-20x2½-3μ.

Septoria incarnata. On living leaves of *Asclepias incarnata*, July, 1894 (No. 1538).

Spots orbicular, small, (1–2 mm.), subdiscoid, subconcave below, whitish, with a narrow raised border surrounded by a purple stain. Sporules filiform, continuous, faintly nucleate 20–40 (mostly about 25–30) x 1½–2μ.

Hendersonia Pseudacaciæ. On dead limbs of *Robinia Pseudacacia*, March 14, 1894 (No. 1409).

Perithecia thickly scattered, covered by the epidermis, which is raised into pustules and ruptured, but the perithecia are for the most part not erumpent. Sporules oblong-elliptical or cylindrical, obtuse, brown, mostly a little curved, 15–22x6–10μ, scarcely constricted at the septa.

Differs from *Camarosporium celtidis*, E. & E., in the absence of any longitudinal septa, and from *Hendersonia fusarioides*, Sacc., in its shorter, broader sporules.

Hendersonia Fraxini. On dead limbs of *Fraxinus viridis*, March 6, 1895 (No. 1676).

Perithecia erumpent from the bleached fibers of the inner bark, from which the epidermis has fallen, about ¼ mm. diam., subhemispherical becoming more or less flattened. Sporules oblong-elliptical, 3- (exceptionally 4-) septate, not constricted; hyaline and continuous at first, finally brown, 11–13x5–6μ.

H. Pyri, Fckl, has basidia much longer than the sporules, but in the Kansas specimens no basidia were observed.

Pestalozzia Kansensis. On old dead leaves of *Quercus macrocarpa*, Jan., 1894 (No. 1357).

Acervuli hypophyllous. Conidia oblong-fusoid, 4–septate, the terminal cells hyaline and conical, the three inner cells pale brown (not yellow brown), entire length 16–18μ, colored part 11–13x5–5½μ, terminal bristle oblique, 15–20μ long, pedicels about 15μ long.

Comes near *Pestalozzia Saccardoi*, Speg., which differs in having the inner cells nearly opaque. *P. pallida*, E. & E., has the conidia rather smaller and nearly hyaline.

Pestalozzia Œnotheræ. On dead stems of *Œnothera biennis*, March 7, 1895 (No. 1682).

Acervuli gregarious, erumpent-superficial, orbicular or subelliptical, ½–¾ mm. diam. Conidia obclavate-oblong, 3 septate, not constricted, subinequilateral or slightly curved, 10–12x3–4μ, rounded at the base, acute at the apex; terminal cell mostly hyaline, surrounded by a short, hyaline, mostly

oblique bristle, 5–7μ long and generally arising from a point a little to one side of the apex.

This is closely allied to *P. Mochæta*, Desm., but the acervuli are larger and the mature conidia have only the terminal cell hyaline and sometimes all the cells are pale brown; the conidia are also different in shape.

Pestalozzia fibriseda. On weather-beaten wood of *Rhus glabra* (No. 1931).

Acervuli gregarious, subhysteriform, $\frac{1}{2}$–1 mm. long. Conidia oblong-elliptical, 3-septate (5-septate including the two septa that cut off the small, terminal, hyaline cells), brown, 15–20x8μ, with slender pedicels about 25μ long and a short (10–12μ), oblique terminal bristle.

Labrella infuscans. On weather-beaten pine boards, March, 1894 (No. 1425).

Perithecia subelliptical, minute, flattened, and very thin above with an elongated opening as in *Hysterium*, minute ($\frac{1}{4}$ mm. long), black, not polished, when dry more or less collapsing and the opposite sides rolling together, as in *Hysterium*, with the sides loosely close. Texture of the perithecia rather coarsely cellular with a tinge of green (under the microscope). Sporules short-elliptical or subglobose, hyaline, without nuclei. The perithecia are gregarious, on elliptical spots slightly darker than the surrounding wood, by which it is easily recognized.

Cladosporium brevipes. On living leaves of *Populus monilifera*, Sept. 18, 1894 (No. 1576).

Spots orbicular, grayish brown with a darker border, 3–6 mm. diam., caused by the puncture of an insect. Hyphæ amphigenous, short (12–15μ), forming black tufts thickly scattered over the central parts of the spots. Conidia, oblong-fusoid, yellowish, continuous or uniseptate (exceptionally 2 to 3-septate), 12–15x3μ. The hyphæ are about the same size, color and shape as the conidia.

This species is quite common on seedling trees 1–4 feet high on sand bars along streams.

Macrosporium Panici. On living leaves of *Panicum virgatum*, July, 1894 (No. 1525).

Spots small, oblong, 1x½ mm., white, with a reddish-purple border. Hyphæ simple, subcæspitose, multiseptate, 20–30x 4μ. Conidia obovate-clavate, 3-septate and sparingly muriform, 20–30x10–12μ. Accompanied by elliptical, 5x3μ, uniseptate *Cladosporium* conidia.

Macrosporium Uredinis. Parasite on Uredo of *Puccinia graminis*, on leaves of "volunteer" oats, Sept. 1894 (No. 1561).

Hyphæ simple, erect, smoky-hyaline, 80–110x3½–4μ, septate. Conidia clavate, 5 to 7-septate and sparingly muriform, mostly prolonged below into a short stipe, yellowish-brown 30–50x 12–15μ. Its peculiar host makes this an interesting species.

Clasterisporium Kansense. On under side of a cottonwood post lying on the ground, Sept. 1894 (No. 1563).

Effused, forming thin, black patches, 1–3 mm. across. Hyphæ very short or obsolete. Conidia oblong-fusoid, 3-septate, only very slightly constricted, brown, about 20x3½–4½μ. Ends obtusely pointed. straight or curved. Differs from *C. atrum* (Lk.) in the absence of any pedicel and the uniformly 3-septate conidia.

Cercospora didymospora. On capsules and leaves of *Œnothera Fremonti*, July, 1894 (No. 1506).

Spots dark gray, scattered, small (1–2 mm. diam.), subindefinite, giving the host a clouded appearance. Hyphæ tufted on a tubercular base, 65–70μ diam., simple yellow-brown, subentire, about 10–15x4μ. Conidia subfusoid-cylindrical, nearly straight, only slightly narrowed toward the ends, uniseptate but not constricted, hyaline or slightly yellowish, 15–30x4μ.

Cercospora physalicola. On living leaves of *Physalis Virginica*, July, 1894 (No. 1529).

Spots suborbicular, dark reddish-brown, ½–1 cm. diam., mostly bounded by a narrow black line, especially so the smaller spots. Hyphæ epiphyllous, tufted, olivaceous, continuous, subgeniculate above, 60–75x5μ. Conidia hyaline, 110–150x5μ, faintly 4–6 or more septate.

Sporodesmium exasperatum. On the bottom of an oaken barrel in a cellar, May 10, 1894 (No. 1461).

Pulvinate, 1–4 mm. diam., subconfluent, black. Conidia varying in size from a single globose cell 5–7μ diam. to subglobose, obovate, or irregular shaped, uniseptate, quadrate or variously septate, subpedicellate, 10–20μ diam., all distinctly roughened with small subhyaline warts. The wood around the pulvinate tufts is stained purple-red.

BIOGRAPHICAL SKETCH OF M. S. BEBB.

By S. B. Parish.

Michael S. Bebb was born December 23d, 1833, at Hamilton, Ohio. His father was a leading member of the Ohio bar, and in 1846 was elected Governor of that State. Subsequently Governor Bebb removed with his family to the neighborhood of the present city of Rockford, Illinois, where he had purchased a large tract of land. Becoming interested in founding a colony near Knoxville, Tennessee, the Governor and his family resided for a time in that city. But the Civil War soon breaking out Governor Bebb, who was ardently loyal to the Union side, was compelled hastily to return to the North.

At this time Mr. Bebb entered the government service at Washington, and continued to be so employed until the conclusion of the war, when, his father having died, he undertook the management of the paternal farm in Illinois. But being by this time married and having a family growing up about him, he removed, with a view to their education, to Rockford, and this beautiful town remained his home for the rest of his life.

In 1872 the position of Botanist to the Department of Agriculture was offered to him, but he declined to accept the office, influenced largely by the dissatisfaction with which

VOL. IV. MAY, 1896. NO. 5.

ERYTHEA

A JOURNAL OF BOTANY, WEST AMERICAN AND GENERAL.

EDITED BY

WILLIS LINN JEPSON

ASSISTED BY

ALICE EASTWOOD AND J. BURTT DAVY.

CONTENTS:

PAGE
Notes on Sphærocarpus, - - *Douglas Houghton Campbell* 73
New Species of Kansas Fungi.—I,
J. B. Ellis and Elam Bartholomew 79
Distribution of Rhamnus in America.—I. - *E. L. Greene* 83
Notes on Cyanophyceæ.—I. - - *W. A. Setchell* 87
Short Articles.—Local Uses of Plants, - - 89
Additions to the "Manual of the Bay Region Botany" 90
Miscellaneous Notes and News, - - - 90

BERKELEY, CALIFORNIA.

CUBERY & COMPANY, PRINTERS
587 Mission Street, San Francisco, California
1896.

NEW SPECIES OF KANSAS FUNGI.—I.

By J. B. Ellis and Elam Bartholomew.

Polyporus cryptopus. On the ground in sandy pastures attached to dead grass roots. Rooks Co., Kan., July 24, 1895 (No. 1800).

Pileus orbicular, 3–4 cm. diam., grayish white, margin very thin, involute-repand or evenly incurved, smooth, or slightly wrinkled but not scaly. Stipe $1\frac{1}{2}$–2 cm. long, almost entirely subterranean, slightly swelled at the base, thickened above to about 1 cm. or less at its attachment to the decurrent hymenium. Pores about $\frac{3}{4}$ mm. diam. by $1\frac{3}{4}$ mm. in depth, mostly subangular, margin uneven, covered with a subgranular tomentum. Spores white, nucleate, obtuse or acuminate-elliptical, 5–7 x 3–4μ.

A fine, well marked species very abundant in one locality, peculiar in its habitat, looking like small whitish discs lying flat on the ground!

Puccinia clavispora. On leaves of *Andropogon nutans.* Phillips Co., Kan., Aug. 30, 1895 (No. 1911).

II and III. Amphigenous. Sori linear, at first covered by the yellowish epidermis, then naked, 1 mm. to 1 cm. long. Uredospores obovate, 20–40x18–25μ, subechinulate, roughened, with stout club-shaped paraphyses and stout but deciduous pedicels. Teleutospores clavate, 40–60x18–22μ, constricted above the middle, the upper cell subglobose or short-elliptical and darker; the lower paler and gradually attenuated below into the very stout pedicel. Epispore smooth, thickened and rounded at the apex.

From *P. omnivora*, E. & E., this differs in its longer and broader, more deeply constricted teleutospores and very short almost obsolete pedicels.

Puccinia tecta. On leaves of *Carex sparganioides.* Rooks Co., Kan., Oct. 7, 1895 (No. 1972).

II and III. Hypophyllous, thickly scattered along the entire leaf. Uredosori soon rupturing the epidermis and

profusely discharging the spores over the leaf. Uredospores broadly elliptical or obovate, 20-25x15-18μ, distinctly echinulate at first, nearly hyaline, then smooth and light yellowish, filled with fine granular matter throughout without nucleus. Epispore very thin,—1μ thick. Paraphyses common in some of the sori. Teleutosori abundant, very small, about ¼ mm. diam., nearly round, persistently tectate, running by confluence into long continuous patches entirely covering large areas of the host. Teleutospores light to dark yellow, clavate to oblong, 40-60x15-18μ, lower cell usually wedge-shaped and nearly hyaline; upper cell often terminating in a curved acuminate beak or rounded, or flat on top; nearly all containing either nuclei or fine granular matter. Pedicels stout, hyaline, 10-25μ long. Approaches *P. angustata*, Pk., but differs from that in its paraphysate uredosori and in its smaller and persistently tectate teleutosori.

Phoma biformis. On dead *Amorpha fruticosa.* Rooks Co., Kan., March 16, 1896 (No. 2057).

Perithecia scattered on the weather-beaten, decorticated wood, innate-erumpent, hysterii-form, ¾-1 mm. long, ovate-conical, ½-1 mm. diam. Sporules oblong-elliptical, 2-nucleate, hyaline, subobtuse, 6-7x2μ. Basidia simple, obclavate 12x2μ.

P. Amorphæ, Sacc., has the perithecia globose-lenticular and much smaller with ovate sporules 6-7x4μ.

Cytispora celastrina. On dead stems of *Celastrus scandens.* Rooks Co., Kan., April 5, 1895 (No. 1716).

Stromata scattered or subseriate, 1-1½ mm. diam., sunk in the inner bark, raising the epidermis into pustules which are soon ruptured, exposing the stout, short-cylindrical, broadly perforated ostiolum, black inside, multilocular, (8—10-celled). Sporules oblong, straight or slightly curved, 6-8x 1¼μ.

Differs from *C. Celastri*, Clem., in its much shorter, scarcely curved sporules.

Cytispora Gleditschiæ. On dead limbs of *Gleditschia triacanthos.* Rooks Co., Kan., Dec. 16, 1895 (No. 2011).

Perithecia circinate on the surface of the inner bark. Ostiola convergent and erumpent together in a small, black disc pierced by a single pore. Sporules allantoid, 5-6x1¼μ, slightly curved.

Sphaeropsis Robiniæ. On dead branches of *Robinia pseudacacia.* Stockton, Kan., Nov. 29, 1895 (No. 1990).

Perithecia scattered, sunk in the surface of the inner bark, 190-230μ diam., raising the epidermis into flattish pustules which are pierced in the centre by the minute papilliform ostiolum, but not ruptured. Sporules oblong-elliptical, brown, 15–21x8–9μ.

Sphæropsis Triacanthi. On dead limbs of *Gleditschia triacanthos.* Rooks Co., Kan., Dec. 9, 1895 (No. 1993).

Perithecia scattered, subcuticular, becoming superficial, hemispherical or conic-hemispherical, 400-600μ diam. and when uncovered, black and shining. Sporules elliptical, brown, 15–22x9–11μ.

This differs from *Sphaeropsis Gleditschiaecola,* Cke., Grev. VII, p. 33, in its scattered perithecia and smaller sporules. Kansas specimens of this last named species, on limbs of *Gleditschia,* have the minute perithecia 3–10 in a hemispherical, erumpent stroma, 1-1½ mm. diam. with oblong sporules 12–16x6–8μ.

Haplosporella longipes. On dead branches of *Morus alba.* Rooks Co., Kan., Dec. 9, 1895 (No. 1992).

Stromata depressed-globose, ¾-1 mm. diam., semi-erumpent, black, often collapsing above. Perithecia small, 6 10 in a stroma. Sporules oblong or oblong-elliptical, brown, 12-20x5–6μ, often slightly curved. Basidia slender, 75 90μ long, resembling paraphyses.

H. moricola, Berl., has sporules 20–23x10μ on stout and shorter basidia.

Haplosporella Negundinis. On fallen limbs of *Negundo aceroides.* Rooks Co., Kan., Feb. 26, 1896 (No. 2051).

Perithecia caespitose-erumpent, depressed-globose, $\frac{1}{3}$ mm. diam. with a papilliform ostiolum. Sporules oblong, obtuse, 20-25x10-12μ brown. This is a well marked but rare species.

Diplodia inquinans. On fallen limbs of *Negundo aceroides.* Phillips Co., Kan., March 23, 1896 (No. 2072).

Perithecia scattered or 2-3 together, not confluent, buried in the bark which is slightly raised and perforated by the papilliform ostiolum, $\frac{1}{3}$–$\frac{1}{2}$ mm. diam. Sporules oblong-elliptical, brown, uniseptate, scarcely constricted, 12–15x3–4μ, abundantly discharged and blackening the surface of the bark as in *Melanconium.*

Differs in this respect and in its smaller sporules from the other species on *Celtis.*

Cercosporella nivea. On living leaves of *Solidago radula.* Rooks Co., Kan., Sept. 23, 1895 (1951).

Scattered over both sides of the leaves without any spots, forming small, nearly snow-white patches. Fertile hyphæ caespitose, continuous, hyaline, oblong-cylindrical, subentire, sometimes swollen at the tips, 15-25x4μ. Conidia long, slender, multi-nucleate, hyaline, 100-160x3–4μ.

Outwardly resembles *C. cana,* Sacc., but the hyphae are very different and the conidia much longer and narrower.

Coniosporium Maydis. On old corn stalks. Rooks Co., Kan., July 24, 1895 (No. 1789).

Conidia globose or subglobose, brown, 3$\frac{1}{2}$–5$\frac{1}{2}$$\mu$ diam. seated on an orbicular, flattish-tubercular stroma $\frac{1}{2}$-1 mm. diam. and with the black stratum of conidia resembling a black *Patellaria.*

Differs from *C. inquinans,* D. & M. (as represented in F. Gallici 4697) in its darker color, rather larger conidia and the presence of the gray tubercular stroma. The tufts in our specimen show indications of becoming confluent in which case it would closely resemble *C. inquinans.*

Dendryphium curtipes. On the underside of an old hog trough. Rooks Co., Kan., Dec. 20, 1894 (No. 1612).

Hyphae caespitose, short, 30-40x8μ, obscurely septate, simple, each bearing a chain of 3-6 truncate-fusoid conidia 40–50x8-9μ, 6-8 septate, dark brown, almost opaque. The hyphae which arise in spreading tufts directly from the matrix, are hardly distinguishable from the conidia.

Cladosporium subsessile. On living leaves of *Populus monilifera*. Sept. 18, 1894 (No. 1576).

This species was issued in *North American Fungi*, No. 3288, and described in ERYTHEA, IV, 27, as *C. brevipes*, Ell. & Barth., but as there is already a *C. brevipes*, Peck, necessity requires the present rechristening of our species.

DISTRIBUTION OF RHAMNUS IN AMERICA.—I.

By EDWARD L. GREENE.

The type of the genus *Rhamnus* is a shrub or small tree of middle and southern Europe of considerable economic value, treated of under that name by the Greek botanists of antiquity, first designated *Rhamnus catharticus* by Bauhin as long ago as 1623, and now everywhere received under that binary name.

An aperient syrup prepared from the berries of this bush was in use from time immemorial down to at least the beginning of the present century by all medical practitioners; though in recent years it has been to a great extent replaced by less drastic purgatives. It was said that even the flesh of birds that had fed upon the berries produced, to some degree the same effects. The juice of the unripe berries is of a deep yellow, and is used in staining papers. They are sold in England under the name of *French Berries*. The juice of the ripe berries, treated with alum is the beautiful *sap green* of the painters. The bark affords a well known and much used yellow dye; and the unripe berries dye wool green. Char-

VOL. V. JANUARY, 1897. NO. 1.

ERYTHEA

A JOURNAL OF BOTANY, WEST AMERICAN AND GENERAL.

EDITED BY

WILLIS LINN JEPSON,
Instructor in Botany, University of California.

CONTENTS:

PAGE
A New West American Peucedanum . . . *Willis L. Jepson* 1
Notes on the Pollination of Some Californian Mountain Flowers.—III . . . . *Alice J. Merritt* 1
New West American Fungi.—III . . . . *J. B. Ellis and B. M. Everhardt* 5
Note on Herbarium Technique 7
Botanical Exploration in California in 1896 7
Biographical Notices 9
Short Articles.—Sphagna Boreali-Americana Exsiccata 10
The Range of Salix nigra 10
Miscellaneous Notes and News 11

BERKELEY, CALIFORNIA.

DULAU & CO.,
37 SOHO SQUARE, LONDON, ENGLAND

OSWALD WEIGEL,
KONIGSTRASSE 1, LEIPZIG, GERMANY

NEW WEST AMERICAN FUNGI.—III.

By J. B. Ellis and B. M. Everhart.

Asteridium bicolor, E. & E. On leaves of *Arctostaphylos bicolor*, Cedros Island, Lower California. A. W. Anthony.

Maculicolous, hypophyllous. Spots orbicular, about 2 mm. diam., brown, nearly black above. Perithecia innate-erumpent, flattened, and subumbilicate-collapsed above. Asci oblong-obovate, short-stipitate, 22–26x18–22μ, with abundant filiform paraphyses. Sporidia oblong-fusoid, fasciculate, yellowish, becoming brown, 3–4-septate, scarcely constricted, 18–20x6–7μ.

Homostigia Rhoinum, E. & E. On dead leaves of *Rhus integrifolia*, San Diego, Cal., March, 1895. K. Brandegee (No. 15).

Stromata epiphyllous, sphæroid, gregarious, ¼-⅓ mm. diam., prominent but closely covered by the blackened epidermis, which is ruptured at the apex. Ascigerous cells 2–5 in a stroma, sphæroid, white inside, 80–120μ diam. Asci oblong-clavate, short-stipitate, 60–70x12–14μ. Paraphyses filiform, abundant, often curved above. Sporidia biseriate, oblong-fusoid, 4-septate, constricted at the middle, hyaline, subobtuse, 15–18x3½–4½μ.

Associated with *Didymosporium Rhoinum*, E. & E., on the same leaves.

Didymosporium Rhoinum, E. & E. On leaves of *Rhus integrifolia*, San Diego, Cal., March, 1895. K. Brandegee (No. 15, in part).

Acervuli epiphyllous, subcutaneous, globose, ¼–⅓ mm. diam., black, slightly raising the epidermis and blackening it with the ejected, oblong-fusoid, uniseptate, 12–14x3½–4μ spores.

Cercospora Hyptidis, E. & E. On *Hyptis*, Playa Maria, Lower California. A. W. Anthony.

Forming indefinite, tobacco-brown patches on the under side of the leaf. Hyphæ fasciculate, simple, brown, sparingly septate, 75–100x3½–4μ. Conidia fusoid-cylindrical, straight, 30–40x3–4μ, brown, uniseptate. But for the brown conidia and hyphæ this would be *Ramularia*.

Cercospora Eriogoni, E. & E. On leaves of *Eriogonum molle,* Lower California. A. W. Anthony.

Hypophyllous, in small, sooty-black, scattered patches scattered irregularly, leaves marked above with dark brown subindefinite spots. Hyphæ subdecumbent, sending up erect branches more or less divided above, subhyaline at first, becoming dark brown and multiseptate. Conidia cylindrical, nearly straight, dark brown, multiseptate, 35–55x4μ. Approaches *Helminthosporium.*

Puccinia Serjaniæ, E. & E. On *Serjania,* Pescadero, Lower California, September, 1893. A. W. Anthony.

III. Sori in small (2–3 mm.) orbicular groups, depressed-hemispherical, nearly black, naked, hypophyllous; marginal sori immature, smaller, and paler, giving the appearance of a pallid margin. Teleutospores elliptical, brown, scarcely constricted, epispore thick, smooth, not much thickened at the apex, 25–40x15–20μ. Mesospores (spores without septa) much more numerous, and mostly smaller, elliptical, 22–30x15–20μ, all on slender pedicels, 50–60μ long, attenuated below. The leaves are marked above, opposite the clusters of sori, with round pallid spots darker in the center.

Puccinia transformans, E. & E. On *Tecoma Stans,* San Felipe, Lower California, September, 1893. K. Brandegee (No. 9).

III. Causing swellings 1 cm. long and 2–3 mm. thick on the petioles, and transforming the young leaves into an oblong-cylindrical, amorphous mass, 1 cm. (or more) long by 2–3 mm. thick. The teleutospores form a thin, cinnamon-colored layer on the surface of these deformations without any distinct, definite sori. They are of an oblong-elliptical shape, pale brown, slightly constricted, rounded at the ends, with the epispore scarcely thickened at the apex, and muriculately roughened, more distinctly so when dry, 22–35x13–16μ, with or without a small papilla at the apex. Pedicels very short, almost none, and soon disappearing.

P. ornata, Hark., on the same host, has hypophyllous, pulvinate sori, has teleutospores 50-70x30–40μ on long pedicels with verticillate processes above, and must be very different from this.

Æcidium Gossypii, E. & E. On leaves of cotton (*Gossy-*

pium), San José del Cabo, Lower California, September, 1893. K. Brandegee (No. 8).

Spots deep, dark brown, becoming reddish towards the margin, and surrounded by a pallid border. Æcidia hypophyllous, erumpent, small (200μ), soon open, margin thin, erose-dentate, erect. Æcidiospores globose or angular, smooth or nearly so, $15–20\mu$ diam.

Æcidium Desmum, B. & C., on the same host, has no spots.

NOTE ON HERBARIUM TECHNIQUE.

An excellent adhesive substance for firmly fastening the terete stems of grasses and other plants to herbarium sheets, is the "White Muslin Isinglass Plaster," manufactured by Bauer & Black of Chicago. It is cleanly, white, and so adhesive as to be immovable without tearing the surface of the sheet to which it is attached. The mounted grass-collection of the University of California suffered much from the "springing" of the ends and bent portions of stems of grasses, owing to the very small glued surface which these terete parts present to the paper, until this plaster was adopted. It is also used in the herbarium of the California Academy of Sciences.

BOTANICAL EXPLORATION IN CALIFORNIA IN 1896.

It is highly desirable, at this time more than ever perhaps, that the botanical exploration of California should be advanced in the most systematic manner possible, and it has seemed to the writer worth the while to make a record of what has been done during the past year. Had a fairly complete record of exploration been made during the first two decades of California's history as an American commonwealth, it would not only be of historical interest, but of value to those who are now engaged on the systematic botany of western America.

It is intended to include here only notes of somewhat extended expeditions or accounts of prolonged collecting in a single locality.

In the latter part of May Prof. W. A. Setchell and Mr. W. L.

VOL. V. APRIL, 1897. NO. 4.

ERYTHEA

A JOURNAL OF BOTANY, WEST AMERICAN AND GENERAL.

EDITED BY

WILLIS LINN JEPSON,

Instructor in Botany, University of California.

CONTENTS:

PAGE

New Species of Kansas Fungi.—II . . . . *J. B. Ellis and Elam Bartholomew* 47

The Explorations of Hartweg in America . . . *Willis L. Jepson* 51

Notes on the Pollination of Some Californian Mountain Flowers.—V . . . . *Alice J. Merritt* 56

Reviews and Criticisms.—

Laboratory Practice for Beginners in Botany 59

BERKELEY, CALIFORNIA.

DULAU & CO.,
37 SOHO SQUARE, LONDON, ENGLAND

OSWALD WEIGEL,
KONIGSTRASSE 1, LEIPZIG, GERMANY

NEW SPECIES OF KANSAS FUNGI.—II.

By J. B. Ellis and Elam Bartholomew.

The following 17 species of new fungi were all found by the junior author in Rooks County, Kansas.

Puccinia substriata. On leaves and sheaths of *Paspalum setaceum*, Aug. 20, 1896 (No. 2237).

II & III. Amphigenous. Uredospores globose or obovate, 19–23x22–30μ ferruginous, very faintly echinulate in minute (½–1 mm.) punctiform or elliptical sori, covered by the irregularly ruptured epidermis. Teleutospores, obovate or clavate, rusty brown, distinctly constricted, upper cell mostly broader and very slightly roughened, only moderately thickened at the apex, which is regularly rounded or sometimes flattened, without any distinct papilla, very faintly striate 27–52x19–23μ, on stout, short (15–20μ), slightly colored pedicels. Sori mostly oblong and about 1 mm. long, covered by the epidermis, which finally splits either along the top of the sorus or oftener along one side, leaving it covered as if by a cap or lid.

Differs from *Puccinia Paspali* Tracy and Earle in the shape of the sori, the slightly echinulate uredospores and the thick, short pedicels of the teleutospores.

Puccinia cryptandri. On leaves of *Sporobolus cryptandrus*, Sept. 16, 1896 (No. 2264).

Epiphyllous. Uredosori linear 1 mm.–1 cm. long, narrow, bordered by the longitudinally cleft epidermis, light-brown. Uredospores globose 20–24μ diam., or elliptical, 25–30x20–23μ, yellowish-brown faintly aculeate. Teleutospores in sori like those of the uredospores, but mostly shorter, oblong-elliptical, yellow-brown, constricted at the septum, 35–45x20–23μ. Epispore smooth, scarcely or only slightly thickened at the apex. Pedicels as long or longer than the spores.

II very abundant wherever the host occurs, from July to October. III very rare.

Differs from *Puccinia sporoboli* Arth. principally in its longer and darker colored uredosori. In that species they are a bright orange.

Erythea, Vol. V, No. 4 [30 April, 1897].

Cytispora Macluræ. On dead limbs of *Maclura aurantiaca*, Dec. 10, 1895 (No. 1999).

Stromata subcuticular, irregularly scattered, or here and there subconfluent, 1–1½ mm. diam., convex, sunk in the unaltered substance of the bark, 4–8-celled, the cells often assuming the form of perithecia with separate, black and shining, smooth-tipped erumpent ostiola, or with the ostiola united and opening through a single central pore. Sporules allantoid-hyaline, only slightly curved, 5–6x1½μ.

This is evidently the spermogonial stage of *Valsa Macluræ* C. & E.

Cytispora Amorphæ. On dead *Amorpha fruticosa*, Feb. 26, 1896 (No. 2049).

Stromata abundant, about ¼ mm. diam., black, multicellular, deep seated in the inner bark, extending to the wood but not changing its color. Epidermis perforated by the prominent stout ostiolum. Perithecia few (3–6) in a group. Sporules subacute, hyaline, slightly curved, 4–6x1–1½μ.

Spermogonial stage of *Valsa Amorphæ* E. & E. (No. 2048).

Cytispora sambucina. On dead branches of *Sambucus Canadensis*, April 10, 1896 (No. 2111).

Stromata convex, 1–1½ mm. diam, slaty-black inside, multilocular, raising the bark into pustules, opening by a single pore. Sporules oblong-allantoid 6–7x1¼μ.

Cytispora leucosticta. On dead branches of *Pyrus Malus*, April 21, 1896 (No. 2123).

Stromata abundantly scattered over the host ⅓–⅔ mm. diam., seated on the surface of the inner bark, not changing its color or that of the wood. Pustules soon erumpent, presenting a crater-like pruinose disc pierced by a single pore.

Perithecia black, subcircinate, 8–12 in a stroma. Sporules hyaline, curved, suballantoid 7–10x1½μ.

Differs from *Cytispora leucostoma* (Pers.) in the form of its stroma and its larger sporules.

Sphæropsis Ailanthi. On dead shoots of *Ailanthus glandulosa*, April 17, 1896 (No. 2118).

Perithecia thickly scattered, globose, ½ mm. diam., buried in the inner bark and raising the epidermis into pustules which are soon

ruptured at the apex. Sporules elliptical, or broadly elliptical, brown, 16–24x7–10μ.

S. sociata Lev. on the same host has the perithecia cespitose.

Sphæropsis Populi. On dead branches of *Populus monilifera*, July 17, 1896 (No. 2191).

Gregarious, perithecia buried in the bark, 200–260μ diam., raising the bark into flattish pustules which are barely pierced by the minute osteola, but not ruptured. Sporules oblong, obtuse, 15–22x 7–9μ.

Sphæropsis ulmea. On dead shoots of *Ulmus Americana* Feb. 20, 1897 (No. 2364).

Perithecia abundant and evenly scattered, minute, 200–300μ in diam., subcuticular, raising the epidermis into minute pustules but for the most part not rupturing it. Sporules oblong-elliptical, brown, 15–21x8–10μ.

S. ulmicola E. & E., has the perithecia exactly like this but in that the sporules are 20–30x12–15μ. *S. ulmi*, Sacc. & Roum., has sporules 60–70x14μ, and *S. ulmi*, Karst., has them 10x4μ.

Diplodia celtidigena. On fallen limbs of *Celtis occidentalis*.

In ERYTHEA, IV, No. 5, p. 82, this was erroneously named *D. inquinans*, and the host given as *Negundo aceroides* by an oversight. Differs from *D. Celtidis* Roum. and *D. argentina* Speg., in its much smaller sporules.

Diplodia rhizogena. On exposed roots of *Fraxinus viridis*, March 27, 1896 (No. 2086).

Perithecia globose, ⅓ mm. diam., suberumpent, in short series, 2–3 mm. long, through longitudinal cracks in the bark. Sporules oblong or oblong-elliptical, deep-brown, scarcely constricted, 20–22x8–10μ.

Differs from *D. inquinans* West, in its seriate less distinctly erumpent perithecia and rather smaller spores. Resembles *D. seriata* De Not, in the seriate perithecia, but that species has the sporules 17–18x7–9μ, and is on a different host.

Diplodia Ceanothi. On dead *Ceanothus ovatus*, April 22, 1896 (No. 2130).

Perithecia scattered, covered, small, 200μ diam., raising and slightly rupturing the epidermis. Sporules oblong-elliptical, constricted, obtuse, deep-brown, 15x7–8μ.

Diplodina Pruni. On fire-killed *Prunus demissa*, April 17, 1896 (No. 2120).

Perithecia subcuticular, scattered or subseriate, globose, smooth, black, about ½ mm. in diam., raising the epidermis into pustules, which are soon ruptured. Sporules elliptical or ovate, yellowish-hyaline, obtuse, 1-septate, and constricted, 10–14x4–6μ.

Stagonospora Populi. On decorticated limbs of *Populus monilifera*, May 6, 1896 (No. 2131).

Perithecia scattered, erumpent, globose, 200–350μ in diam., smooth, black, with a small papilliform ostiolum. Sporules abundant, hyaline, cylindrical, straight or curved, obtuse 3–4-guttulate, 20–30x5–6μ.

Macrosporium negundinicolum. On living leaves of *Negundo aceroides*, Sept. 17, 1896 (No. 2270).

Hypophyllous. On subindefinite dirty white spots thickly scattered over the leaf. Nearly pure white and very noticeable when viewed from above. Hyphæ erect, simple, sparingly septate 35–45 x5μ, smoky hyaline to brown, occasionally cæspitose but mostly solitary, not abundant. Conidia clavate, stipitate, 3–7 septate, now and then with one or two of the cells divided by a longitudinal septum, light-brown, 25–50x10–12μ.

Monilia fungicola. On the peridium of a large fresh specimen of *Lycoperdon giganteum*, completely covering the whole plant. Sept. 21, 1896 (No. 2295).

Forms a thick, ashen-gray, felt-like coating composed of interwoven hyaline hyphæ, sending up fertile, simple branches bearing chains of 4 or more subelliptical hyaline conidia 20–30x15–23μ.

Botrytis papyrigena. On old pasteboard in cellar, May 11, 1896 (No. 2135).

Pulvinate-tufted or sphæriæform, black, tufts varying in size from punctiform to 1 mm. in diam. Hyphæ irregularly branched, slender, bearing the minute (3μ) subglobose conidia clustered at their extremities.

Differs from *B. fuliginosa* C. & E. in its pulvinate-tufted mode of growth and in its shorter hyphæ.

Torula occulta. On the inside of an old decaying elm post below the surface of the ground, May 11, 1896 (No. 2132).

Effused, black, forming a loose tomentose layer on the surface of the wood, extending for several cm. Fertile hyphæ very short, bearing chains of 5–7 or more conidia, varying from globose 7–8μ, to oblong or oblong-elliptical 12–20x7–8μ, slightly narrowed in the middle or biconical, 20–24x8–10μ, and of a lighter brown. The longer conidia are mostly 3-septate but not constricted, and all except the biconical ones are nearly opaque. The chains of conidia are more or less branched and often are composed entirely of the smaller globose conidia, but mostly these smaller ones are between the longer conidia.

T. pulvinata Speg. has the chains of conidia shorter and the oblong ones are wanting.

THE FOLLOWING CORRECTIONS concerning species recently published are here inserted: *Cenangella thujina*, Ell. & Barth., which was published in ERYTHEA, IV, No. 1, Jan., 1896, p. 3, proves to be a synonym of *Patellea hysterioides* E. & E. As the species belongs to the Patellariaceæ rather than the Dermateaceæ, the former name becomes obsolete. *Puccinia Serjaniæ*, described in the January number of the ERYTHEA (V, 6) is not specifically distinct from *P. Arechavaletæ*, Speg., and *Puccinia transformans* (lc. V. 6) is antedated about three months by *P. elegans* Schrtr., in Hedwigia, October, 1896.

THE EXPLORATIONS OF HARTWEG IN AMERICA.

By WILLIS L. JEPSON.

(*Concluded from page 35.*)

ON account of the political disturbances, a contemplated trip to San Diego was abandoned, and it was determined instead to visit the Sacramento Valley. It was not, however, until the next spring, March 8, 1847, that a favorable opportunity offered. This journey was made by water. The explorer touched at San Francisco, Corte Madera (Marin County), botanizing at various landing-places, and, passing through the upper bays into the Sacramento River, arrived at "Fort Sacramento." Thence he proceeded by land, and made his headquarters at the junction of the Yuba and Feather Rivers.